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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/101,236	07/06/1998	YOSHIHIDE MATOBA	PM255089/SCC	9423

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ART UNIT	PAPER NUMBER
1631	11

DATE MAILED: 12/31/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/101,236	Applicant(s) Matoba et al.
	Examiner Ardin Marschel	Art Unit 1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on Sep 28, 2001

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle* 1035 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-36 is/are pending in the applica

4a) Of the above, claim(s) 3-18 and 21-36 is/are withdrawn from considera

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1, 2, 19, and 20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims 1-36 are subject to restriction and/or election requirem

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are objected to by the Examiner.

11) The proposed drawing correction filed on _____ is: a) approved b)disapproved.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) Notice of References Cited (PTO-892) 18) Interview Summary (PTO-413) Paper No(s). _____

16) Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) Notice of Informal Patent Application (PTO-152)

17) Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) Other: _____

Applicants' election of Specie A (claims 1, 2, 19, and 20) in Paper No. 10. filed 9/28/01, is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (M.P.E.P. § 818.03(a)). The suggestion of a changed specie election from the specification is appreciated but the above specie election is deemed yet proper. In the above list of elected claims, claim 9 is not included herein, although cited by applicants, because it requires spraying which is deemed a non-elected specie B embodiment.

A replacement abstract of a single paragraph on a single sheet of paper is required. The present abstract contains two paragraphs which is improper.

Claims 1, 2, 19, and 20 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for fugacity differential equation simulation which evaluate the fugacity via the four parameters of V-change, deposition, transference, and degradation, does not reasonably provide enablement for a generic unlimited differential equation as cited in the claims. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make/use the invention commensurate in scope with these claims.

Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized in Ex parte Forman, 230 USPQ 546 (BPAI 1986) and reiterated by the Court of Appeals in In re Wands, 8 USPQ2d 1400 at 1404 (CAFC 1988). The factors to be considered in determining whether undue experimentation is required include: (1) the quantity of experimentation necessary, (2) the amount or direction presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. The Board also stated that although the level of skill in molecular biology is high, the results of experiments in genetic engineering are unpredictable. While all of these factors are considered, a sufficient amount for a *prima facie* case are discussed below.

It is noted that claim 1, for example, cites the determination of fugacity via a generic unlimited differential equation. It is well known that calculus as a mathematical art has given scientists a vast variety of differential equations. However, in order to simulate a particular entity some type of specificity of calculation is required, not just any equation will suffice. In particular the movement or behavior of a compound in three dimensional space wherein there is deposition,

diffusion, etc. is a complex simulation problem. Thus, significant and specific guidance is required in order to reasonably expect that a simulation will approximate an actual physical behavior such as pesticide behavior in an indoor environment. Consideration of the instant specification reveals that fugacity calculations via differential equation practice follows a particular basic format. One such format is present in the specification on page 52, lines 10-20. Another is given on page 227, lines 6-14, as well as at other citations. No other formula for this calculation has been found in order to calculation such a complex result as the 3-dimensional behavior of a compound in an indoor environment. Thus, no predictable fugacity simulation has been instantly set forth beyond the basic formulation as noted above. The broader generic differential equation in the claims thus is only predictably enabled for the above more limited equation formulation.

Claims 1, 2, 19, and 20 are rejected, as discussed below, under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are vague and indefinite as to the relationship between fugacity and the indoor behavior of the compound in the claim practice. It is noted, for example, in claim 1, lines 6-10, that fugacity is calculated and then indoor behavior is

determined from said fugacity. But nothing defines what determination or relationship is meant for converting fugacity to indoor behavior. Clarification via clearer claim wording is requested.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103(a).

Claims 1, 2, 19, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nose [J. Pestic. Sci. 9(1):7-

12(1994);abstract only] and in view of the legal decision of *In re Venner* [262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958)] regarding computerization via software as in instant claims 19 and 20.

The abstract of Nose supplies evidence that a differential equation evaluation of pesticide movement behavior has been performed by Nose in the first sentence therein. The indoor media in this reference is part of an indoor experiment which models the soil movement of the pesticide oxamyl. The abstract describes the fugacity of the oxamyl regarding its vertical movement from differential equation evaluation, as in instant claim 1, lines 3-10. Various periods of evaluation and/or simulation are described wherein differing diffusion coefficients are utilized which describes the changing or fluctuating mass balance of the compound in time units which are minute (or small) relative to other times in the abstract such as the rainy season. The instant claim limitation "minute" (claim 1, line 12) is here interpreted as indicating smallness of time unit. It is noted that the abstract does not indicate a human safety evaluation as is the elected specie of the instant claims but that pesticide movement in our environment is a well known motivated and suggested concern for human safety in general.

Thus, it would have been obvious to someone of ordinary skill in the art at the time of the instant invention to practice

the Nose modeling of oxamyl movement via differential equation evaluation of this pesticide as a human safety concern thus resulting in the practice of the instant invention. The entire reference by Nose is being requested but is not available at the time of mailing of this office action.

Additionally, the legal decision of *In re Venner* [262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958)] motivates and suggests the computerization or automation of a manual activity as also summarized in the MPEP at section 2144.04, part III. The automation of calculations is an old and well known motivation for performing such practices as modeling or calculating with the increased time efficiency that a computer offers.

No claim is allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703)308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., whose telephone number is (703)308-3894. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703)308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Patent Analyst, Tina Plunkett, whose telephone number is (703)305-3524 or to the Technical Center receptionist whose telephone number is (703) 308-0196.

December 28, 2001

Ardin H. Marschel
ARDIN H. MARSCHEL
PRIMARY EXAMINER